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(54) IRON AND PHOSPHORUS ELECTROPLATING BATH

(57) Abstract:

PROBLEM TO BE SOLVED: To obtain a plating film excellent in resistance to seizure and wear by adding a specified amt. of dodecyl sulfate to an iron and phosphorus electroplating bath contg. iron(II) ion and hypophosphorous acid or its salt.

SOLUTION: Dodecyl sulfate is added by ≥0.5g/l, preferably 0.5-1g/l, to an iron and phosphorus electroplating bath contg. 20-80g/l iron(II) ion using ferrous sulfate, etc., as its source, 0.05-20g/l water-soluble phosphorus source of hypophosphorous acid and/or hypophosphite and further contg., as required, 0-200g/l ammonium sulfate as a conductive salt, 0-60g/l boric acid, etc., as a pH buffer and 0-200g/l ammonium bifluoride as a complexing agent. The water-soluble salts of Na,

K, Li, etc., are used as the surfactant dodecyl sulfate. The plating soln. is preferably controlled to pH 0-3.5, and plating is preferably conducted in this bath at room temp. to 80°C and at ⩾ 0.5A/dm2 current density.